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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,275	08/29/2000	German Gutierrez	19717-001510US	8800

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EXAMINER

NADAV, ORI

ART UNIT PAPER NUMBER

2811

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/650,275

Applicant(s)

GUTIERREZ, GERMAN

Examiner

ori nadav

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 14-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 12 August 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2811

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 8/12/2002 have been approved by the examiner. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1-8 are objected to because of the following informalities: The claimed limitation of "elongate region in direct contact with and said gap" should read "elongate region and in direct contact with said gap".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2811

4. Claims 1-8 and 14-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Figure 3 depicts a conductive seal ring 300 extending around the entire periphery of the die in direct contact with the die through part of elongate region 302. There is no support for the claimed limitation of a conductive seal ring extending around the entire periphery of the die in direct contact with the die in every part (that is, throughout) of the elongate region, as recited in claims 1, 14 and 18.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 6-7, 14-21 and 23-24, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Joardar et al. (5,475,255) in view of Miyata (5,491,658).

Art Unit: 2811

Joardar et al. teach in figure 1 a semiconductor device comprising a die seal structure for a semiconductor die having a first conductivity type silicon substrate comprising an elongate region 106 electrically isolated from the remainder of the substrate extending around a major portion of the periphery of the substrate and having a gap between ends of the elongate region along a minor portion of the periphery; and a conductive seal ring 107 extending around the entire periphery of the die in contact with the die at the elongate region 106 and in direct contact with the gap to provide a limited electrical connection between the ring and the substrate at the gap.

Joardar et al. do not teach a conductive seal ring being in direct contact with the die throughout the elongate region.

Miyata teaches in figures 8 and 9 a conductive seal ring 141 formed in direct contact with a die throughout an elongate well region 131, so as to form a PN junction diode therein.

Joardar et al. teach changing the width of the conductive seal ring and the elongate region in order to control and adjust the filtering capabilities of the device.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to adjust the width of the conductive seal ring and the elongate region so as a PN junction diode is formed therein in Joardar et al.'s device in order to improve the noise isolation of the device and in order to protect the device from an electrostatic damage by absorbing the an electrostatic surge in the PN junction. The

Art Unit: 2811

combination is motivated by the teachings of Miyata who points out the advantages of forming a PN junction diode in isolation guard rings separating analog and digital circuits (column 2, lines 8-16 and 59-67, and column 3, lines 1-14).

Regarding claims 2, 14 and 19, Joardar et al. and Miyata teach an elongate well region of a second conductivity type, and a substrate of a first conductivity type .

Regarding claims 3-4, 15-16 and 20-21, it is conventional to reverse the polarity of the transistor. Therefore, it would be obvious to reverse the polarity, as claimed.

7. Claims 5, 8, 22 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joardar et al. and Miyata, as applied to claims 1, 14 and 18 above, and further in view of Applicant's Admitted Prior Art (AAPA).

Joardar et al. and Miyata teach substantially the entire claimed structure, as applied to claims 1, 14 and 18 above, except an elongate region comprises an elongate dielectric region. AAPA teaches in figure 1 an elongate region comprises an elongate dielectric region. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an elongate region comprises an elongate dielectric region in Joardar et al. and Miyata's device in order to provide better noise isolation to the device with a conventional seal ring.

Art Unit: 2811

Regarding claims 8 and 25, AAPA teaches in figure 1 a conductive seal ring comprises a multi layer structure of alternating conducting and insulating layers, and wherein vias are formed in the insulating layers.

Regarding claim 26, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an elongate region comprising oxide in prior art's device, because oxide is a conventional insulating material, of which official notice is taken.

Regarding claim 27, AAPA teaches in figure 1 a conductive seal ring connected to the substrate by a metal stub.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A-B are cited as being related to seal rings.

Response to Arguments

9. Applicant's arguments with respect to claims 1-8 and 14-27 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2811

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

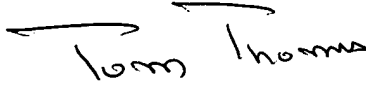
Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722

Art Unit: 2811

and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(703) 308-8138**. The Examiner is in the Office generally between the hours of 7 AM to 3 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at **(703) 308-2772**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**


TOM THOMAS
SUPERVISOR, TECHNOLOGY CENTER
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Ori Nadav

January 18, 2003